societies, as well as the National Museum, to the very great convenience of everybody concerned. I have never found any difference of opinion among working zoologists on this point.

Wm. H. Dall.

Smithsonian Institution, November 5, 1898.

## THE NERNST LIGHT.

To the Editor of Science: Several months have passed since the report of the discovery of a new incandescent electric light by Professor Nernst, of Göttingen. It was rumored that a Berlin firm had bought the patent for five million Marks, and that we were on the eve of another revolution in the illuminating industry, but till recently very little reliable information has been obtained. In the meantime Professor Nernst has been developing and perfecting his invention, and his researches have been crowned with such success that we may look forward to the early appearance of the finished lamp, and perhaps the confirmation of the most sensational rumors.

The astonishing progress in illumination during recent years has been characterized by a great race between gas and electricity. Scarcely had the incandescent light secured a firm hold in the practical world when Auer von Welsbach made his famous improvement on the gas light, and the possibility of the use of acetylene became apparent, so that many believed electricity would after all have to yield the supremacy to gas. Nernst now reclaims the palm for electricity, for he expects that the cost of his light for a whole evening will be no more than that of the Edison for an hour.

The Nernst light requires neither vacuum nor tender filaments. The essential point of the invention is that when substances like magnesia (magnesium oxide) and clay are heated above 3,000 degrees Celsius (6,000° Fahr.—far above the melting point of platinum) a very weak current is sufficient to keep them in an intensely luminous condition. Either direct or alternating currents may be employed, and the magnesia is little injured by use. The only difficulty that remains to be surmounted is a practical and inexpensive appliance for heating the substance to the necessary temperature. The work is, however, progressing and those who know the ability and courage of the inventor are confident that he will succeed.

Professor Walter Nernst, though unknown to most people, is a scholar of high rank in the purely scientific world, and his works or their translations are to be found in almost every scientific library. His brilliant researches won him the newly established chair of physical (theoretical) chemistry at Göttingen, and he is surrounded by advanced students of the most varied nationalities, all of whom greatly admire his fertile mind and genial, inspiring manner. His new invention is but another example of the benefit that patient, conscientious scientific study is sure to bring to the whole world.

H. C. Cooper.

Heidelberg.

## THE DAY OF THE WEEK.

To the Editor of Science: The statement made in your issue of Science for October 18, 1898, by Mr. Edward L. Stabler, that 'I have not found any published rule for the simple problem of determining mentally the day of the week without reference to a calendar or lengthy table' leads me to send you the following formula, which I have never seen in print, but which is of so simple derivation that it may well have been used by others than myself.

Let $Y$ represent any year of the Gregorian calendar and $D$ the number of any day in that year, *e. g.*, for February 1, 1898, $Y = 1898$ and $D = 32$. Neglecting fractions, put

$$Y + D + \frac{Y-1}{4} - \frac{Y-1}{100} + \frac{Y-1}{400} = 7n + r$$

where $n$ is the quotient and $r$ the remainder obtained by dividing the first member of the equation by 7. The remainder $r$ then represents the number of the day of the week, *e. g.*, if $r = 1$ the given date falls on Sunday, etc., and if the division is exact, $r = 0$, it falls on Saturday. For the date given above we have

| | | |
|---|---|---|
| $Y$ | | 1898 |
| $D$ | + | 32 |
| $(Y-1)/4$ | + | 474 |
| $(Y-1)/100$ | − | 18 |
| $(Y-1)/400$ | + | 4 |
| | | 7)2390 |
| $n$ | | 341 |
| $r$ | | 3 = Tuesday. |